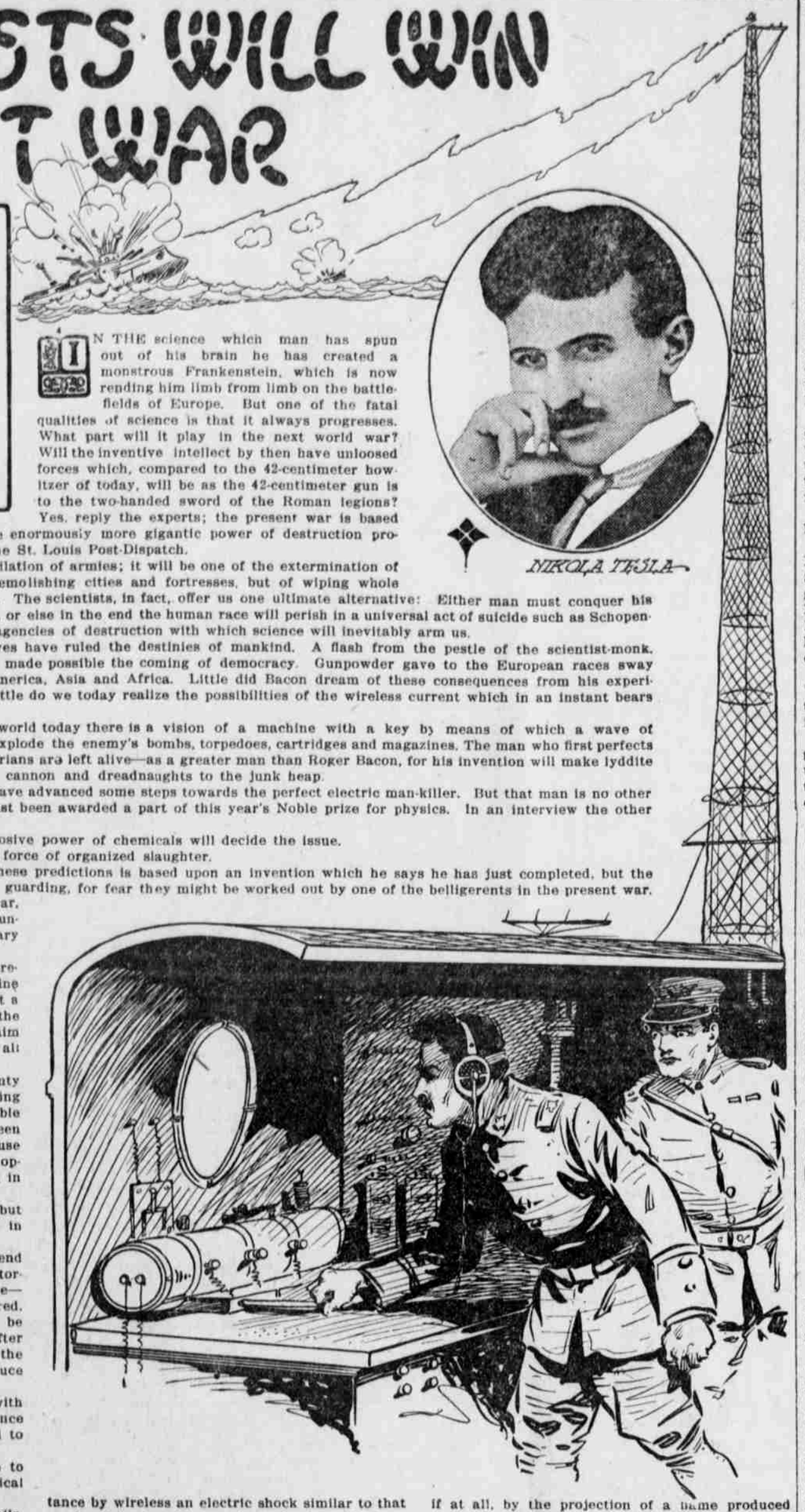
SCIENTISTS WILL WIN THE NEXT WAR



NIKOLA TESLA, electrical scientist, says not armies alone but whole populations will be destroyed by use of wireless currents—His own air torpedo deadly

NIKOLA TESLA

IN THE science which man has spun out of his brain he has created a monstrous Frankenstein, which is now rending him limb from limb on the battlefields of Europe. But one of the fatal qualities of science is that it always progresses. What part will it play in the next world war? Will the inventive intellect by then have unloosed forces which, compared to the 42-centimeter howitzer of today, will be as the 42-centimeter gun is to the two-handed sword of the Roman legions? Yes, reply the experts; the present war is based on chemistry; but future warfare will wield the enormously more gigantic power of destruction provided by electricity, according to a writer in the St. Louis Post-Dispatch.

Then it will not be a question of the annihilation of armies; it will be one of the extermination of whole populations. It will not be a matter of demolishing cities and fortresses, but of wiping whole nations at one stroke from the face of the earth. The scientists, in fact, offer us one ultimate alternative: Either man must conquer his innate murderous instincts and cease from war, or else in the end the human race will perish in a universal act of suicide such as Schopenhauer foretold—self-slain by the unspeakable agencies of destruction with which science will inevitably arm us.

For 600 years, gunpowder and its derivatives have ruled the destinies of mankind. A flash from the pestle of the scientist-monk, Roger Bacon, blew feudalism off the globe, and made possible the coming of democracy. Gunpowder gave to the European races sway over the whole world; it subjected to them America, Asia and Africa. Little did Bacon dream of these consequences from his experiment with saltpeter and sulphur. Perhaps as little do we today realize the possibilities of the wireless current which in an instant bears the spoken word from Arlington to Honolulu.

In the imagination of every scientist in the world today there is a vision of a machine with a key by means of which a wave of electricity will be flashed through the air to explode the enemy's bombs, torpedoes, cartridges and magazines. The man who first perfects this device will go down in history—if any historians are left alive—as a greater man than Roger Bacon, for his invention will make lyddite and picric acid obsolete, and will send rifles, cannon and dreadnaughts to the junk heap.

Only one scientist so far makes a claim to have advanced some steps towards the perfect electric man-killer. But that man is no other than Nikola Tesla, electrical wizard, who has just been awarded a part of this year's Noble prize for physics. In an interview the other day he laid down these prophesies:

1. This is the last war in which the explosive power of chemicals will decide the issue.
2. In the next war electricity will be the force of organized slaughter.

The confidence with which Tesla uttered these predictions is based upon an invention which he says he has just completed, but the details of which he is for the present jealously guarding, for fear they might be worked out by one of the belligerents in the present war. In case the United States were involved in war, however, he says he would place his device unreservedly at the disposition of the military authorities.

"It is, of course, possible," he said to a representative of the Post-Dispatch Sunday Magazine a few days ago, "to produce electrical effects at a distance by means of wireless energy. But the insurmountable difficulty thus far has been to aim an electric wave in one direction only, with all of its force concentrated on a given target.

"I will go so far as to say that after twenty years of application to the problem of transmitting energy by wireless, I have just made a valuable advance in this direction. The stage has been reached where to an extent it is practicable to use this force in war, and to predict such a development as will make electricity supplant cannon in battle.

"It is impossible to give details at this time, but in a general way my invention can be used in three methods.

"In the first place, it will be possible to send an explosive body through the air—an aerial torpedo flying many times faster than an aeroplane—and to direct this projectile to the spot desired, where it can be exploded by wireless. It will be possible to guide the projectile by wireless after it has passed beyond the range of the eye, and the aim is so accurate that it is possible to reduce the error to a few feet in a thousand miles.

"In the second place, it will be practicable with this apparatus to produce effects at a distance which will interfere with the enemy and tend to make him ineffective.

"In the third place, it promises to be able to produce at a distance such effects of electrical tension as will jeopardize life and property."

The inventor declined to go into specific details, saying that it is safer to be specific after the fact. But one would gather from the words he did speak that he has contrived a torpedo of the air flying under its own power as a torpedo swims in the water, which can be steered by wireless and exploded by the same force. Such a projectile would have a range not of some twenty miles, like the highest power cannon, but one limited only by its own flying endurance. It would be harder to hit with shell and rifle fire than an aeroplane, because of its smaller size and swifter velocity, and it need not be manned by a crew who would be exposed to death at every instant.

Such a missile, aimed according to the mathematical formulas used today by gunners whose target is beyond the range of eye and telescope, could be dispatched for the destruction of a battleship long before her own guns would be able to come into play. Safe from the shells of the greatest ordnance, it could start from a point miles beyond their range and destroy the batteries without the possibility of a reply.

The second and third methods of which Tesla speaks are discussed in rather cryptic language, but leave the inference that he believes himself already able, in some degree, to produce at a distance by wireless an electric shock similar to that produced by touching a charged wire. One can think of no other way in which effects perilous to life and property could be obtained with electricity.

With this idea worked out to its ultimate perfection, one might foretell such appalling events in warfare as this: An entire army, in its trenches, is without warning seized with the death agonies of a wretch in the electrical chair, and is exterminated by a silent enemy, using no bullets. Or, at a given moment, every living thing in a great city is struck dead as if by lightning, by means of a force unleashed hundreds of miles away by an officer who merely pulls a lever in a wireless tower.

Tesla appears to see in the future a warfare of electrical appliances more deadly than all the cannon ever made; he sees entire areas electrified and made untenable for any living creature. Death and destruction will be dealt out at unheard of distances, with zones of action more spacious than we now dream of. There is foreshadowed a conflict in which not armies but nations may be destroyed in a single action, by men armed with thunderbolts more mighty than those of the heavens. No wonder that Tesla, his own imagination recoiling in horror, says:

"I hope this is the invention that will make war impossible."

Another device for which inventors are seeking is one that will be able, by means of the wireless current, to explode at a distance the enemy's magazines of ammunition. If this were perfected, one man in London, by pressing a button, could set fire to all the explosives in the Krupp factories and blow that institution into bits; or he could blow up all the cartridges and explosives in the German army. Or another man in Berlin could with one stroke blow the English fleet out of the water with its own powder. In an article in a Paris newspaper recently, Marconi, father of wireless telegraphy, declared that such an invention would mean the abolition of firearms and a reversion to hand-to-hand fighting.

A Dutch inventor named Lanzius, now in New York, claims to have made such a device. An Italian inventor won considerable notoriety for himself two years ago by demonstrating an apparatus which he declared would explode ammunition at a distance by means of a wireless current—but he was shown to be a fraud. A young New Yorker, who already has several authentic inventions to his credit, declares he has perfected a method of emitting wireless current which will melt all metals within a certain radius. A California inventor asserts that he can create a flame at a distance by means of wireless, and offers to set fire to any fleet approaching the Pacific coast.

The Germans are reported to have used heat to destroy the barbed-wire entanglements of the Russians. Tesla believes that the result was obtained, if at all, by the projection of a flame produced by hydrogen gas under high pressure. Such a flame can readily be projected for 10 feet, which might be sufficient when the trenches are close enough together. In such a flame barbed wire would melt like wax.

In all of the belligerent countries, and in those which fear they may sometime become belligerents, the best brains are hard at work on the problem of contriving new methods of murder more deadly and more wholesale than those now employed. Some of their dreams of future warfare may seem fantastic. But the rude cannon of the Turks seemed an incredible prodigy at the siege of Constantinople in the fifteenth century; and to the artillerymen of our Revolutionary war the machine gun of today would appear an equal marvel. On can scarcely doubt that if man continues to maintain his delight in war, science will be at hand to supply him with weapons as advanced in murderous power over those today, as the arms of today surpass the sling and stone with which David, introducing the artillery of his era, slew the armored giant. Will human nerves be able to endure these colossal horrors? Probably; today they endure the shock of explosives, the sound of which would have sent Achilles to the madhouse.

TEST OF YOUTH

You often see a woman at the market pinching the end of a chicken's breastbone to find out how tender—in other words, how young—the fowl is. Oddly enough, the same test with human beings is one of the most reliable known. If in advanced life the lower part of your breastbone feels elastic when pushed inward, you may assume that no important changes have yet taken place in your arteries, or otherwise in your anatomical make-up.

The human breastbone is shaped like an ancient Roman sword, and the upper part of it is like the sword handle. Its point is a piece of cartilage, which anatomists call the "xiphoid" cartilage. The early hardening and stiffening of it indicate that the changes that accompany old age have prematurely begun.—Youth's Companion.

OR THEY WOULD BE MUCH TROUBLE.

As a rule women look at things differently from men—and it's a good thing for most husbands that they do.—Indianapolis Star.

Mrs. Kawler—Do you consider Alice very good looking?

Mrs. Blunderby—Oh, Alice is pretty enough; but I wouldn't call her an Adonis.

ELECTRIC FURNACES

An electric furnace for the heat treatment of steel used in automobile construction has been introduced. Its method of producing uniform, dependable heat that is so urgently sought by automobile manufacturers is quite novel in electric furnace practice, although its principle is comparable to that of the well-known Nernst lamp. Both the floor and the domelike covers of this furnace are of a refractory material which is practically nonconducting at ordinary temperatures. To start the furnace, a current is passed through a bed of coke laid on its floor. On being sufficiently heated the floor becomes a conductor and in turn heats the wall and top, rendering them conductive, until finally the entire furnace becomes incandescent. It is stated by those who have tried the furnace that its use in the heat treatment of automobile parts promises to be extensive in the future.

DEFINED.

Knicker—What are a congressman's duties?
Bocker—To run, sit, lie and stand.

HEMMED IN.

"How did you get that stitch in your side?"
"Oh, I got hemmed in a crowd."

LEADING-STRINGS

By H. M. EGBERT.

"I guess we'll let the boy see what poverty's like," said close-fisted old Simon Granger to his wife.

Maria Granger agreed. She was a typical product of Newburgh, a manufacturing town of two hundred thousand souls, some of them bodies without souls, as one might say. The Grangers, by virtue of Simon's four million dollars, acquired in the packing business, stood at the head of the aristocracy, although the Barry-Smiths ran them close, old Jim Smith, or Jim Barry-Smith, as his wife came to be known, owning some three millions acquired in the paper game.

When Tom Granger announced his decision to become an author there was consternation. In the end his father gave him the choice between entering the packing business and earning his own living.

"He'll soon come to his senses, ma," he told his wife.

There was consternation also in the Barry-Smith household. Maud Barry-Smith was considered as good as engaged to Tom. The union would establish the two families at the top of the Newburgh social register. Maud, a heartless, shallow society girl, upbraided Tom sternly.

"Don't be a fool, Tom!" she said. "Are you going to throw away all those millions? If you must write, do it at home, in your spare time."

Tom felt cut to the quick at the girl's defection. He, too, had grown up in the idea that some day he was to do what had been drilled into him ever since he could remember—marry

"Don't Be a Fool, Tom."

Maud. However, he could not give up the plan, the great plan for the great novel.

So he left the parental household with about twenty dollars in his pocket, ostensibly bound for New York. However, he knew that he could live unknown in a less secluded part of Newburgh, and he had no intention of seeking his fortune in the metropolis. He went to a cheap boarding house not two miles from his home, and disappeared from the ken of his old associates.

"When you're ready to enter the packing business my home's open to you," his father had said.

The first three weeks Tom spent writing ceaselessly. Then he awakened to the fact that his money was gone. His landlady, a kind-hearted woman named Elkins, took him to task.

"Writing may earn money," she said doubtfully. "But a young man wants to get a job. A steady job. Now why don't you speak to Mr. Rogers on the fourth floor. He was saying only yesterday that there's going to be a vacancy in his insurance office for a couple of men."

Tom obeyed, because he had obeyed most of his life, and the upshot was that he found himself engaged at nine dollars a week on the clerical staff. And there his life began.

To come home on Saturday nights, with nine dollars of actual earnings, with four over when his board was paid gave him a sense of strange and delightful independence. He had a good stock of clothes; he had no worries. And night after night he worked steadily at his book. He was depicting Newburgh, because it was all he had known, except for his years at college, which had left only a hazy impression. And because it was so simple the book was really great.

Tom's eyes were opened to the meaning of American life. He lived and worked in an old-fashioned part of the city, not far from the roaring arteries of traffic, yet secluded as if it were a century ago. And the people whom he met, honest young working fellows and quiet families, were as different as possible from those of the old life, which seemed so far away. And if ever he had felt a tenderness for Maud Barry-Smith it was forgotten as soon as he set eyes on his landlady's daughter, Elsa.

Elsa was a girl of twenty, and studying stenography to help support her mother. Tom was amazed at the limitations of her knowledge. After a while it dawned on him that her limitations were precisely in those things of which he had never taken any account.

The young man was drifting into a very serious love affair when an amazing thing happened. He had finished the book and sent it to a publisher, who had accepted it, much to his surprise, though he knew of the difficulties of first books. But, two months later, he found himself famous.

All the papers were full of the young author who had been satisfied to stay at home and write of the local town. His photograph was in every Sunday issue. He was interviewed. More satisfactory, he received a check, in first payment, for seven thousand dollars.

Very soon his mother descended in triumph upon him and haled him forth with kisses and reproaches. Tom, who lived in a vague world (as always), in which the central figure was Elsa, had a misty vision of a tear-stained face, and a memory of his promises to return.

"He'll never return," said practical Mrs. Elkins. "He's the best ever, but—what's the use? I know human nature, Elsa. So dry your eyes and don't be a little goose!"

At home Tom's father condescended to invite him to resume his life with the family. The neighbors, who thought a good deal of a man who could make good in the writing business, resolved to forget the scandal of his departure. Maud Barry-Smith released a tentative millionaire from her clutches.

"I knew you'd make good, Tommy," she said, and looked meaningly at him.

Tom was too much absorbed in the plans for his second novel to read that light in her eyes. But everybody took the engagement for granted. They began to discuss the date of the wedding.

Tom had a constant vision of Elsa's tear-stained face. But, unpractical as ever, he only meant to return as soon as he had done his duty toward his family. Meanwhile his book absorbed him. Then one day the storm burst.

"When are you going to ask Maud to be your wife?" his mother asked fondly. "You see, we don't want to hurry you, Tom, but people are beginning to talk, and—"

Tom felt a devil of craft enter his heart. All at once he saw the baited trap that awaited him.

"Oh, yes, mother," he answered vaguely.

When she had gone he stole downstairs. Like a thief he left the house, gained the street, and took a street car. Half an hour later he stood, with desperate intent, before the overjoyed Mrs. Elkins. And Elsa, entering, saw them there.

Tom heard her step, he turned and grasped her in his arms.

"Tom!" she protested.

"I came to ask you to marry me at once!" cried Tom. "At once, Elsa, dear."

"But you two aren't engaged!" exclaimed Mrs. Elkins, scandalized.

"Now see here!" Tom burst out. "I guess we all got on together pretty well when I lived here, didn't we? Well—I want Elsa. And I'm determined to have her. And those people the other side of Newburgh have got a plan for me to marry somebody else. I didn't see it, because I never see things. But it seems that it's all fixed, cut and dried, and—and it's up to you two to help me out."

"Mr. Granger, you're perfectly absurd!" exclaimed the mother.

Tom turned to Elsa, who, oddly enough, was still half in and half out of his embrace.

"I know I'm a fool. I can't understand life. I can only write about it," said Tom. "I wish I knew how to ask you properly, but—Elsa, dear, won't you overlook my stupidity and tell me that you'll marry me? Yes, and take care of me. I want to marry you before they find I'm here and yank me away."

"Tom, do you love me?" the girl demanded, looking him very straight in the face.

"I never loved anyone if I don't," said Tom.

"Then—yes, dear," said Elsa. "Because I love you with all my heart."

"Then I'll take charge," said Mrs Elkins. "I believe you two young people were just made for each other, and you want somebody to look after you, Tom, you dear, foolish boy, because—"

And she burst into tears at the thought of the happiness in store for the young people, and their love, which was to carry them through the uncharted seas of marriage.

When, three hours later, Tom and Elsa found themselves husband and wife, and emerged into the late summer sunshine from the little church, an immense crowd surrounded them. Photographers came hurrying up with cameras. Their path was blocked—that magic path to the station and the honeymoon land.

"Look!" gasped Mrs. Elkins, staring at a newspaper which somebody held before her.

Under the caption "Author's Runaway Marriage" she saw the photographs of the bride and groom.

Then, through the crowd, scattering it, came an automobile, and Tom's parents hurled themselves to the ground.

"Stop the marriage if it isn't too late!" exclaimed the father.

"It is too late," said Mrs. Elkins, planting herself squarely in front of him.

"Hurrah!" yelled a street urchin, capering before them.

"You hear that, Simon?" asked Tom's mother, with cold rage. "Our son has disgraced our name again, and irreparably. I wash my hands of him forever more."

"Madam," asked Mrs. Elkins, "pray may I ask, have you ever done anything else?"

But neither the anger nor the silence reached Tom's ears. For already, with Elsa, he was traveling the flowery meads of honeymoon land, which reaches, if one can find the way, to the slopes of paradise.